REMARKS

Reconsideration and allowance are respectfully requested in view of the foregoing amendments and the following remarks.

Claims 1, 2, 11 and 12 have been amended. Claims 1, 2, 11 and 12 are the only claims active in this application.

Previously presented claims 1, 2, 11 and 12 were rejected under 35 USC § 112 second paragraph as being indefinite. It is believed that the amendment of these claims to delete the term "fine grain size" and "increased grain bound density" renders this rejection moot. Accordingly, it is believed this amendment should be entered on this basis alone in that it clearly reduces those issues which might be present upon the filing of an appeal.

Additionally, claims 1, 2, 11 and 12 were rejected under 35 USC § 102 (e) as being anticipated by *Baldwin et al.*, U. S. Patent No. 6,333,238. Claims 1, 2, 11 and 12 are further rejected under 35 USC § 102 (b) as being anticipated by *Isobe et al.*, U. S. Patent No. 5,187,559. Applicants' respectfully traverse the rejections of record.

It should be noted that there are significant differences between the finish resistor made by Applicants' process and that formed by either the *Baldwin* or the *Isobe et al.* processes. Specifically, Applicants' invention will not have resistor heads which will be deliberately selected or formed to have temperature coefficients of resistance that is opposite that of the resistor body (as is the case in Baldwin) in order to offset the temperature change of the resistance of the resistor body. On the contrary, the *Baldwin* resistor adjusts the final temperature coefficient of resistance for the entire resistor by changing the materials in the resistor body versus the resistor head. The instant invention adjusts the final temperature coefficients of the resistance of the entire resistor by passing a current through the resistor to

physically alter the effective doping of the resistor body to electrically alter the temperature coefficient of the resistance. This electrical alterable function of Applicants' resistor make it more useful and more precisely tuned.

In Applicants' invention the temperature coefficient and the length of the resistor heads of Applicants' invention are designed so that they have minimal impact on the overall temperature compensation range for the entire resistor, that is to say the entire resistor provides the adjustment for the temperature coefficient. Accordingly, it is respectfully submitted that the *Baldwin et al.* device has to make the resistor head in a far more precise manner that would be required in Applicants' invention and accordingly, the cost of manufacturing the *Baldwin* device would clearly be higher. The *Baldwin* reference does not anticipate the structure of Applicants' finished resistor. If is evident that this would make the resultant *Baldwin* device simply more expensive than Applicants' invention to manufacture.

The *Isobe* resistor likewise is significantly different from Applicants' invention. The *Isobe* resistor is required to have two types of dopant present, arsenic and phosphorous or indium and boron. This is not the case in Applicants' invention. In the *Isobe* resistor the first dopant gives the resistor the negative temperature coefficient while the second dopant gives the resistor a positive temperature coefficient. *Isobe* then uses a current through the resistor to electrically alter the temperature coefficient. In contrast, Applicants' invention has only one type of essential dopant, phosphorous. This one dopant (phosphorous) alone is used to control the initial resistor temperature coefficient. This temperature coefficient can be either positive or negative depending upon the level of the phosphorous doping concentration. The electrical trimming process can be employed for both negative and positive initial temperature coefficient resistors. The initial temperature coefficient (hence the chosen phosphorous doping) determines the range

of resistances for which the resistor can be trimmed. This allows the resistor of the Singh invention to be trimmed without difficulty with phosphorous concentrations between $6x10^{19}$ and $1x10^{20}$ cm^3 in direct contrast to the device shown in the *Isobe* reference (see figure 5) which indicates the trimming is impossible in this range of phosphorous doping concentrations.

Accordingly, it cannot be said that either the *Isobe* reference or the *Baldwin* either teach or suggest Applicants' invention and the specific physical structure, as well as the methodology used in making it and accordingly, it is believed that all claims now active in this application patentable define Applicants' invention over the art of record. It is further respectfully submitted that entry of this amendment is warranted under the provisions of 37 CFR § 1.116 in that it places this application in condition for allowance and further entry of this amendment at the minimum would reduce those issues which might be present upon the filing of an appeal. Accordingly, Applicants' respectfully request entry of this amendment, the reconsideration of this application and earnestly solicit an early notice of allowance.

In view of the above, it is believed that this application is in condition for allowance, and such a Notice is respectfully requested.

Respectfully submitted,

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